

SURVEY OF HEMIPTERA COLLECTED ON COMMON MILKWEED, *ASCLEPIAS SYRIACA*, AT ONE SITE IN OHIO.¹

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ABSTRACT: Hemiptera frequenting 337 plants of common milkweed, *Asclepias syriaca* were surveyed by daily collecting for a period of 90 consecutive days. Forty-six species are listed, some of which are probably new Ohio records. Five species were considered to be significantly abundant (more than 50 individuals collected): *Lygaeus kalmii*, *Lygus lineolaris*, *Plagiognathus politus*, *Adelphocoris lineolatus*, and *Cosmopepla bimaculata*. Only *L. kalmii* (1,173 individuals collected) and *Oncopeltus fasciatus*, which was relatively scarce, are host specific.

The common milkweed, *Asclepias syriaca* L. (Asclepiadaceae), is a herbaceous perennial which is widely distributed in eastern United States, and is frequent along roads and in fields. It occurs in large stands or as solitary plants. *A. syriaca* is unusual in that it can reproduce vegetatively and as a result is a highly successful colonist (Wilbur, 1976). The pinkish flowers are borne on large umbels, and the numerous, wind-borne seeds develop in large pods.

Certain species of milkweed-specific Hemiptera such as *Lygaeus kalmii* and *Oncopeltus fasciatus* are readily maintained in the laboratory and have been extensively studied (e.g., Caldwell 1974, Dingle 1968, Feir 1974, Kelton 1975, Ralph 1977, Rothschild 1973).

The only major previous attempt to survey milkweed insects in the United States was that of Weiss and Dickerson (1921). These authors listed 8 species of Hemiptera collected from *A. syriaca* in scattered localities in New Jersey, with no attempt at daily collecting, and no information on numbers of individuals present. The present study lists 45 species of Hemiptera from a single site in Bowling Green, Ohio with numerical data obtained by daily collecting during a 90-day period (Table 1). The daily abundance of 4 common species is shown in Figure 1.

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MATERIALS AND METHODS

The study site, a railroad right-of-way located in Bowling Green, Wood County, Ohio, was chosen because it was neither sprayed nor mowed during the entire season. Within this area (18.29 x 99.4 m.) 337 milkweed plants were investigated. Most plants were randomly distributed throughout the study area, but there were several clumps of 5-15 plants. Flowering began June 15 and continued into early September.

Hemiptera were hand-picked or aspirated from each of these 337 plants daily for 90 consecutive days (June 9-September 6, 1976). In addition four late-season collections were made (Sept. 12, 18, 25, and Oct. 4). Collecting was done between noon and 6:00 PM. Specimens were preserved in 85% ethanol to be sorted, counted and determined as time permitted.

All insects were removed from the plants each day. Therefore those collected the following day were individuals which had moved onto the milkweed plants during the preceding 24-hour period (the only exceptions to this would be the first collection, June 9, and the four late-season collections).

RESULTS AND DISCUSSION

The 45 species of Hemiptera collected on *A. syriaca* are listed in Table 1. Five of these species were each represented by 50 or more individuals and are considered "abundant" (*Lygus lineolaris*, *Plagiognathus politus*, *Adelphocoris lineolatus*, *Lygaeus kalmii*, and *Cosmopepla bimaculata*). All of these species were present throughout the collecting period except for *P. politus* which was not collected from July 17 to August 12.

Adults of *Lygaeus kalmii*, the most abundant species of Hemiptera, overwinter, and emerge from hibernacula near milkweed patches in the spring (Caldwell 1974). Nymphs and adults feed on the juices of green milkweed plants during the growing season (Simanton and Andre 1936). Nymphs

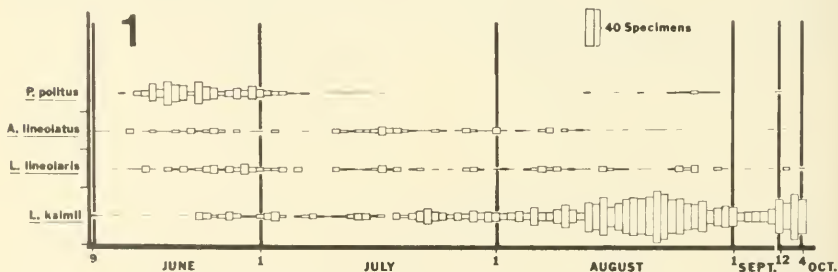


Figure 1. Graph illustrating the number of individuals of the most common species of Hemiptera collected each day from *Asclepias syriaca* plants.

were collected early in the season, most commonly at the base of plants, and seldom near the apex. If disturbed, they quickly dispersed into the gravel bed along the railroad tracks. Although 152 nymphs of various stadia were collected throughout the entire period, they represented only 13% of the total, which would indicate that a large percentage of nymphs were not on the *A. syriaca* plants when collections were made. The population in this area is the eastern subspecies, *L. k. angustomarginatus* Parshley (Slater and Knop 1969).

Another host-specific species, *Oncopeltus fasciatus* was rare at the collecting site in 1976, although in the summer of 1977 an aggregation of nymphs was observed at the study site on 2 milkweed plants (10-20 nymphs per plant). Aggregations of adults were seen in October 1978 at New Rochester, and at Portage, both in Wood County, Ohio.

The tarnished plant bug, *Lygus lineolaris*, is the most common mirid in the eastern United States, frequents many plant species (Knight 1941), and is one of the most widely distributed species in North America where it is found in all agricultural regions at both low and relatively high altitudes (Kelton 1975). Adults overwinter beneath leaves and in mullein rosettes (Watson 1928). Individuals of *L. lineolaris* were most commonly observed in the folded apical leaves where they were apparently feeding.

Adelphocoris lineolatus, the alfalfa plant bug, was also common, frequently on the apical portion of the plants, from which they take flight quickly when disturbed. According to Knight (1941), this species seems to prefer legumes, but may also feed on flower buds and newly formed seeds.

Plagiognathus politus feeds on various weeds, especially ragweed (*Ambrosia* spp.) and goldenrod (*Solidago* spp.), and has been successfully reared on apple (*Pyrus malus*), where the nymphs fed on tender foliage (Watson 1928, Knight 1941).

The last of the "abundant" hemipteran species, *Cosmopepla binaculata*, is a general feeder and has been recorded from all geographical areas in Ohio between April 27 and October 19 (Furth 1974). Detailed host and biological data for this species are given in Esselbaugh (1948).

Many of the other species listed in Table 1 are considered to be only temporary visitors to *Asclepias syriaca*, and in some instances, these are associated with other plant species. *Podisus maculiventris*, *Phymata fasciata*, *Sinea diadema*, and *Nabis* spp. are all predaceous on other insects and their occurrence on milkweed is incidental to their search for prey. Individuals of *Phymata fasciata* often lie in wait for prey in the flower heads and have been observed to capture flies and small Hymenoptera which visit the flowers.

Of the 45 species collected, 19 were mirids, 7 were lygaeids, and 4 were pentatomids. These three families included all of the most common species; no species in any other families were represented by more than 15 individuals during the entire collecting period.

Table 1. Hemiptera collected on *Asclepias syriaca* in Bowling Green, Ohio

	Total Individuals Collected	Dates Collected
ANTHOCORIDAE		
<i>Orius insidiosus</i> (Say)	11	20-VI to 23-VIII
MIRIDAE		
<i>Neurocolpus nubilus</i> (Say)	14	17-VI to 10-VIII
<i>Leptopterna dolabrata</i> (Linné)	2	12-VI to 22-VI
<i>Lygus lineolaris</i> (Palisot de Beauvois)	204	12-VI to 4-X*
<i>Reuteroscopus ornatus</i> (Reuter)	30	19-VI to 6-IX
<i>Trigonotylus</i> sp.	2	10-VIII to 14-VIII
<i>Ilacora</i> sp.	2	26-VI
<i>Criocoris saliens</i> (Reuter)	1	13-VI
<i>Plagiognathus albatus</i> Van Duzee	1	16-VI
<i>Plagiognathus politus</i> Uhler	248	13-VI to 12-IX*
<i>Plagiognathus</i> sp.	1	14-VI
<i>Hyaliodes vitripennis</i> (Say)	1	4-VIII
<i>Chlamydatus</i> sp.	2	6-VII to 12-VII
<i>Ceratocapsus</i> sp.	1	2-VIII
<i>Amblytulus nasutus</i> (Kirschbaum)	12	10-VI to 17-VI
<i>Capsus ater</i> (Linné)	1	18-VI
<i>Taedia scrupeus</i> (Say)	1	10-VIII
<i>Poecilocapsus lineatus</i> (Fabricius)	2	10-VI to 24-VI
<i>Adelphocoris rapidus</i> (Say)	1	28-VII
<i>Adelphocoris lineolatus</i> (Goeze)	137	10-VI to 25-IX*
NABIDAE		
<i>Nabis subcoleopratus</i> (Kirby)	6	9-VI to 3-VII
<i>Nabis roseipennis</i> Reuter	1	23-VI
<i>Nabis americanoferus</i> Carayon	8	23-VI to 10-VIII
REDUVIIDAE		
<i>Sinea diadema</i> (Fabricius)	17	11-VI to 18-IX
PHYMATIDAE		
<i>Phymata fasciata</i> (Gray)	11	19-VI to 25-IX
PIESMATIDAE		
<i>Piesma cinereum</i> (Say)	2	13-VI to 14-VI
LYGAEIDAE		
<i>Lygaeus kalmii</i> Stål	1,173	9-VI to 4-X*
<i>Oncopeltus fasciatus</i> (Dallas)	4	15-VII to 27-VIII
<i>Phlegyas abbreviatus</i> (Uhler)	10	25-VI to 27-VII
<i>Ortholomus scolopax</i> (Say)	6	9-VIII to 2-IX
<i>Pachybrachius bilobatus</i> (Say)	6	9-VIII to 6-IX

<i>Nysius ericae</i> (Schilling)	1	2-VII
<i>Blissus leucopterus</i> (Say)	1	25-VII
BERYTIDAE		
<i>Jalysus spinosus</i> (Say)	4	25-VII to 18-IX
<i>Berytinus minor</i> (Herrich-Schäffer)	1	13-VII
RHOPALIDAE		
<i>Leptocoris trivittatus</i> (Say)	9	18-VII to 4-X
<i>Stictopleurus crassicornis</i> (Linné)	1	18-IX
<i>Harmostes reflexulus</i> (Say)	1	4-VIII
ALYDIDAE		
<i>Alydus eurinus</i> (Say)	2	20-VI to 18-IX
PENTATOMIDAE		
<i>Cosmopepla bimaculata</i> (Thomas)	79	17-VI to 4-X
<i>Euschistus variolarius</i> (Palisot de Beauvois)	11	26-VI to 4-X
<i>Euschistus tristigmus</i> (Say)	1	24-VII
<i>Podisus maculiventris</i> (Say)	11	15-VI to 18-IX
Unidentified nymphs	19	20-VI to 12-IX
CYDNIDAE		
<i>Sehirus cinctus</i> (Palisot de Beauvois)	15	22-VI to 27-VII
TINGIDAE		
<i>Corythucha marmorata</i> (Uhler)	2	17-VI to 18-VI

*Collecting data represented graphically in Fig. 1.

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ADDENDUM

The Coleoptera portion of this survey is scheduled for publication in December, 1978 as follows:

- Dailey, P.J., R.C. Graves and J.M. Kingsolver. 1978. Survey of Coleoptera collected on the common milkweed, *Asclepias syriaca* at one site in Ohio. Coleopt. Bull. 32 (in press).